Introduction to Missile Medicine

Part I: Environment

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Intro to Missile Medicine

- Mission
- Equipment
- Terminology
- Personnel

The Nuclear Triad

- Sub-Launched Ballistic Missiles
- Bombers
- Intercontinental Ballistic Missiles “ICBM’s”
  - Peacekeeper “LGM-118” or “MX”: retired 2005
  - Minuteman III “LGM-30”: current inventory

ICBM Mission

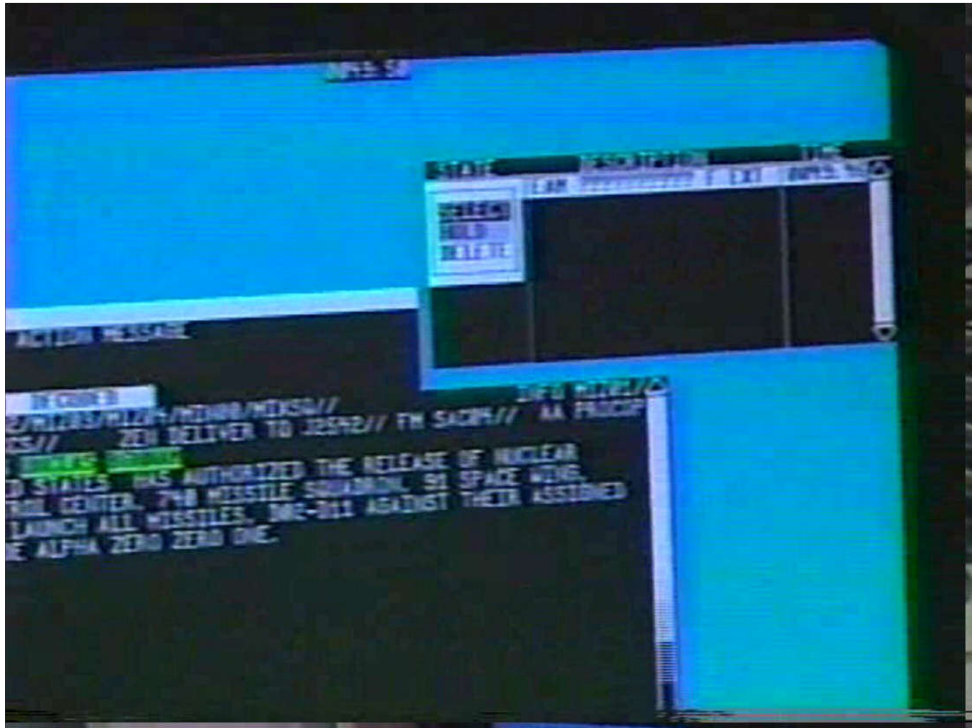
- “Intercontinental BallisticMissiles(ICBMs) provide a safe, secure, reliable, strategic deterrent – credible to friend and foe - continuing to deter potential adversaries, dissuade would-be aggressors, and assure allies the steadiness of purpose in fulfilling global security requirements. ICBMs deliver critical deterrence ensuring security and safety against today’s threats while preparing for an uncertain future.”
- Northrop Grumman “On the Golden Anniversary of the ICBM”, 2009

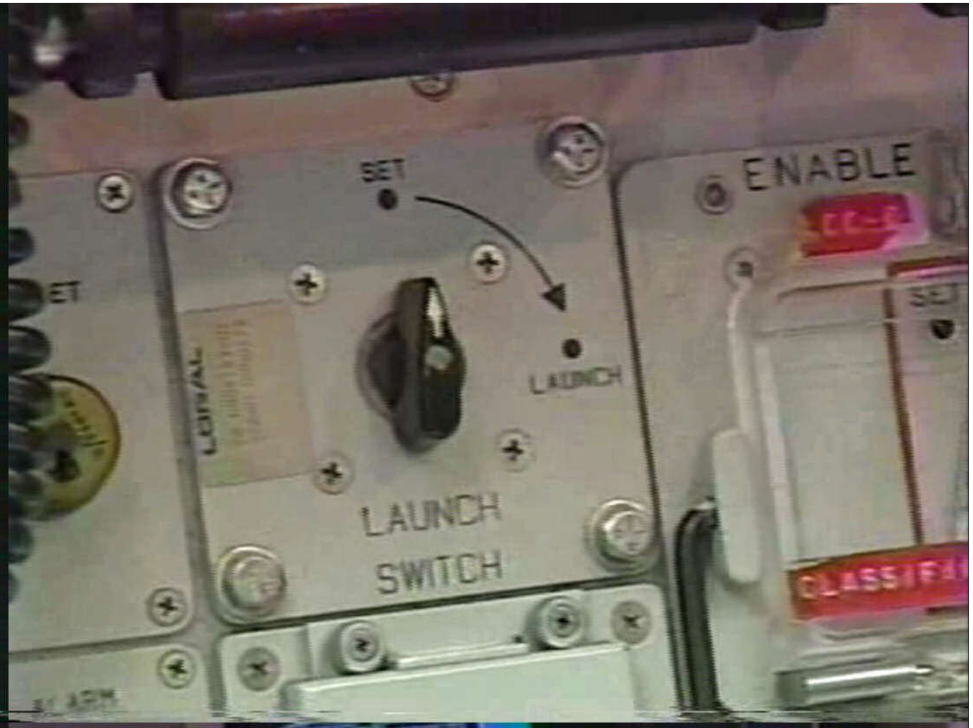
ICBM's Provide:

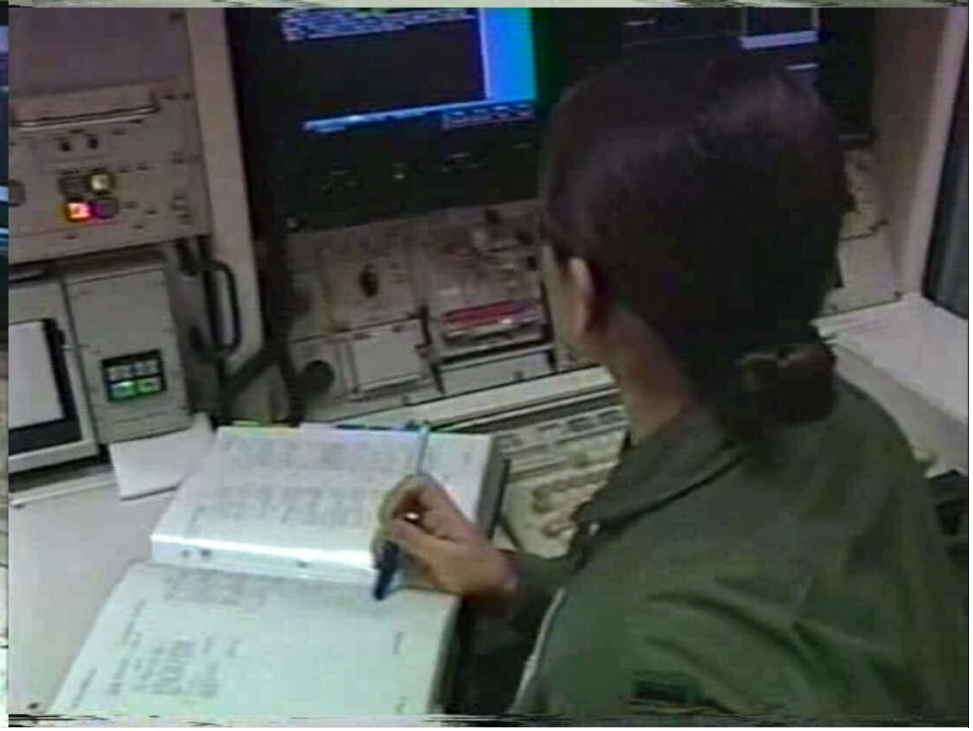
- Strategic deterrence
- Immediate response
- Survival for bombers
- Flexible targeting
- Spectacular fireworks

ICBM's Destroy:

- Military Forces
- Command facilities
- The will to fight
- The ability to retaliate
- Everything for miles

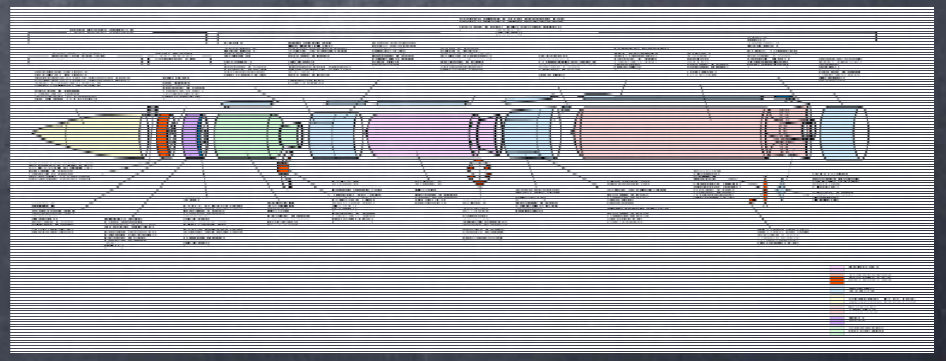



SET
ENABLE
LAUNCH
LAUNCH
SWITCH



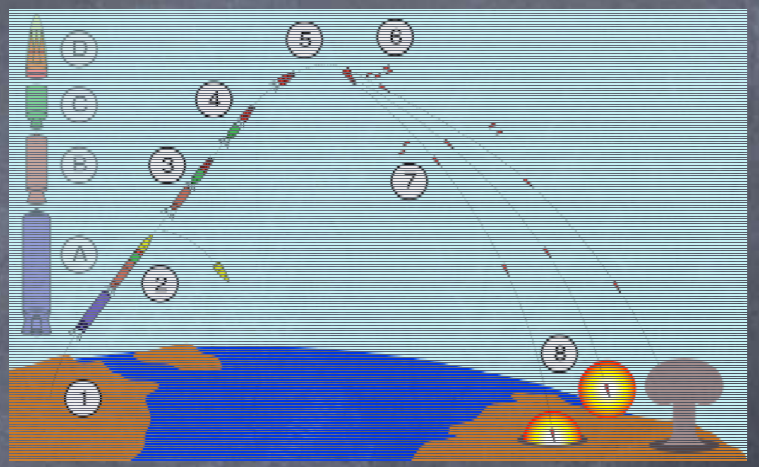
Minuteman III

- “Minuteman”
  - Historical reference to American militia
  - Can be launched in approx. 60 seconds.
- LGM-30G
  - L = silo launched
  - G = surface attack
  - M = guided missile



MM-III Vitals*

- Dimensions:
  - 59.9 ft tall (18 meters)
  - 79,432 lbs (32,158 kilos)
  - 5.5 ft diameter (1.67 meters)
- Range: 6,000+ miles
- Speed: 15,000 mph (Mach 23 / 24,000 kph)
- Ceiling: 700 miles (1,120 km)



- *http://www.af.mil/information/factsheets/factsheet.asp?id=113

Terminology

- Missileer
  - An officer, usually Lt or Capt, who works as the launch control officer for a missile field.
  - Maintains “Alert Status” similar to “Flying Status”.
  - Works 24 hour shifts, with cycles of duty and rest time.

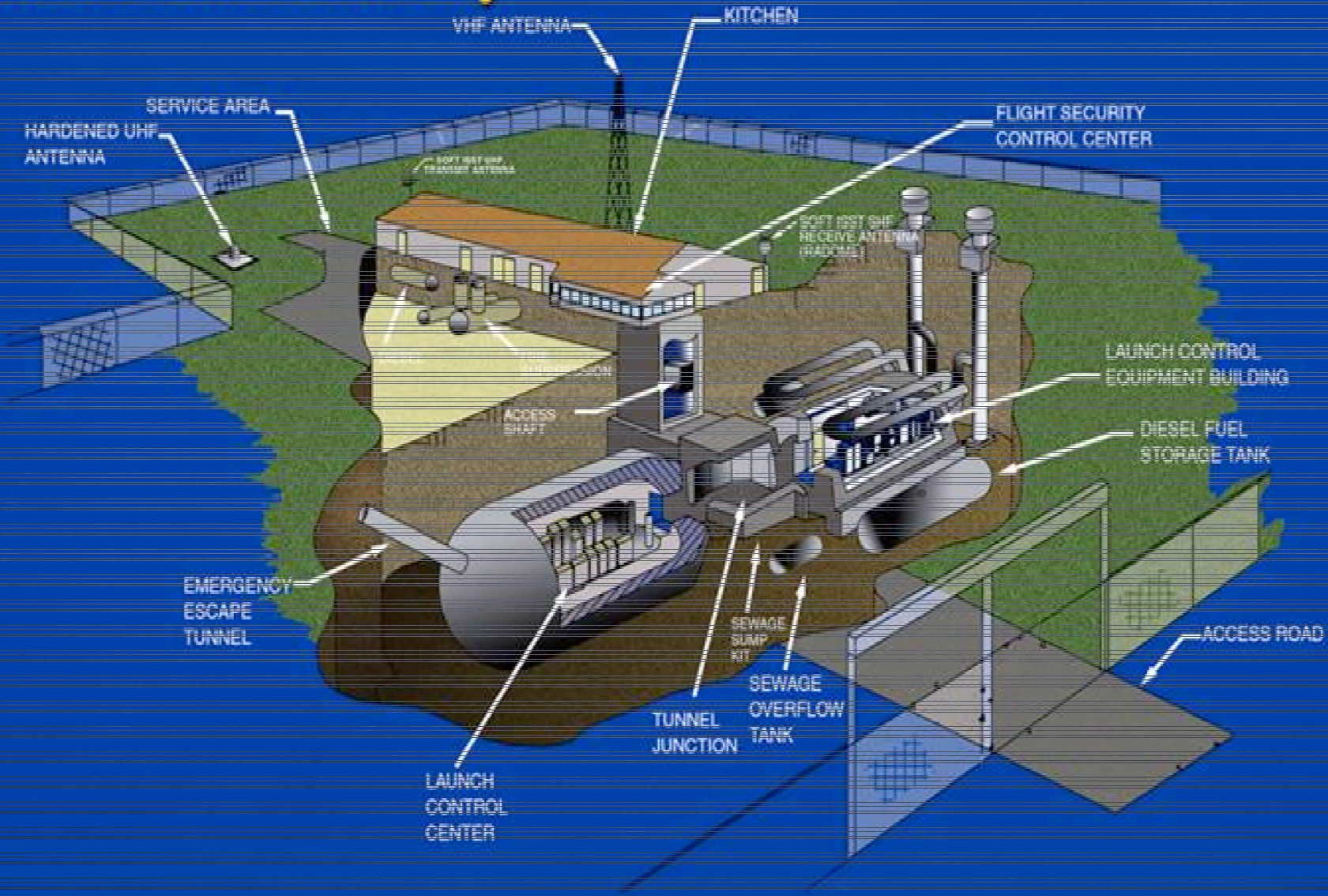
Terminology

- Launch Control Center (“LCC”)
  - The hardened below-ground complex housing the capsule, where missileers work.
- Launch Facility (“LF”)
  - The missile silo, located some distance from the MAF.

The Missile Alert Facility (MAF)

- Above ground complex that houses barracks, dining, and the entry to the launch control center & launch control equipment building.
  - Monitors 10 missiles
  - Can assume control of 50 other missiles if necessary
- Launch Control Center (“LCC”)
  - Hardened below-ground capsule where missileers work
  - “Fallout shelter” for MAF personnel with food, etc.

Missile Alert Facility



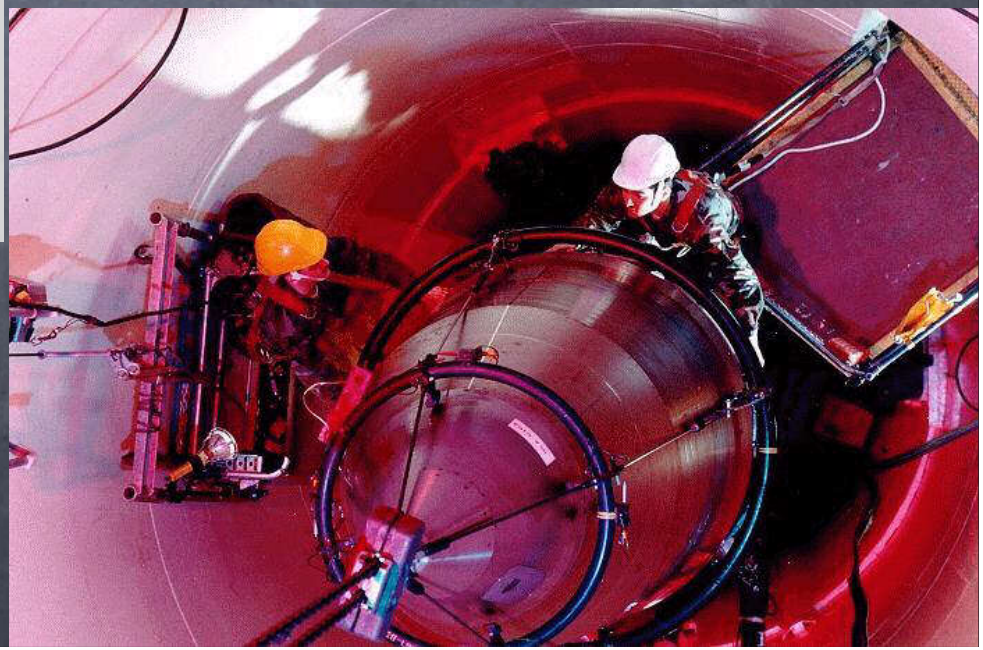
Missile Alert Facility

Launch Facility (LF)

- The actual missile silo
- Located some distance from MAF
- Discrete markings, but not “secret”
  - Named by phonetic code and missile number
  - I.e.: Kilo 5, Golf 9, etc

Launch Facility

The Launch Facility (LF)

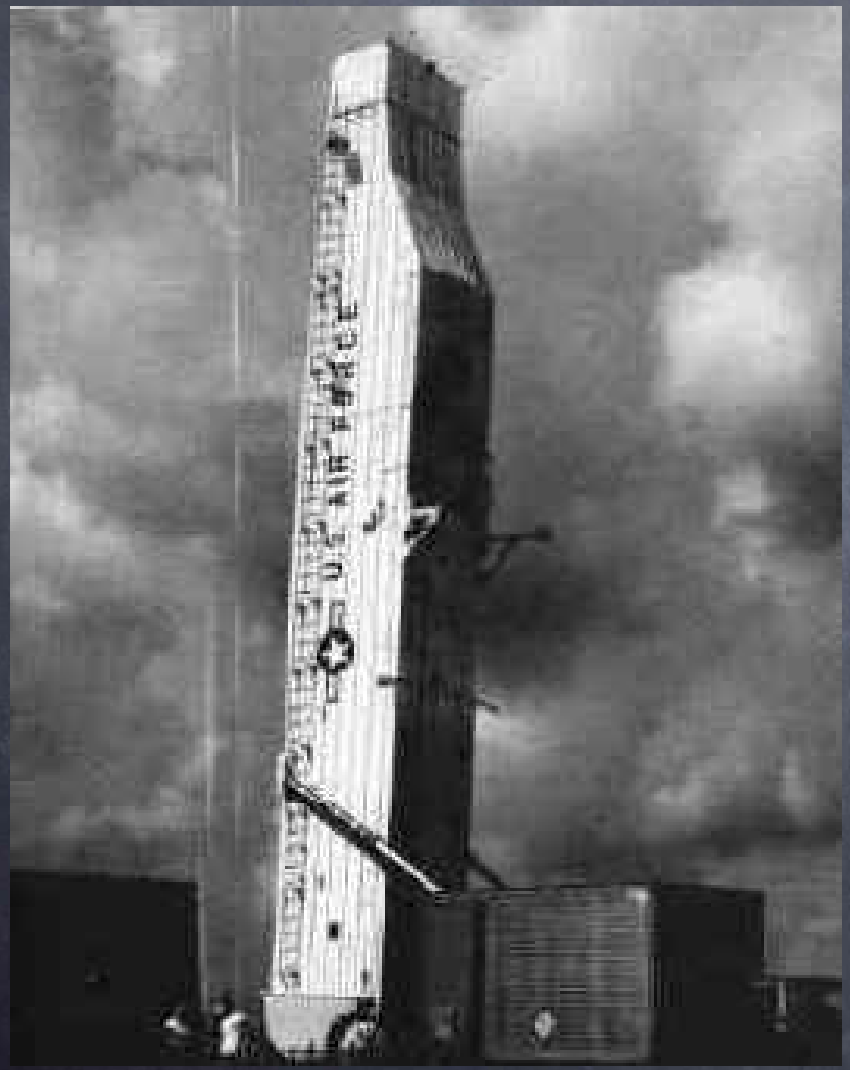


Transporter Erector

- Movement of missiles to the LF
- Setup of missiles in LF

- http://www.afspc.af.mil/shared/media/photodb/photos/080731-F-9999X-001.jpg

Transporter Erector



Personnel

- Personnel involved
  - Security - stockpile security, escort, MAF security
  - Missileers - MAF Commander, release of weapons
  - Helicopter Aircrew - piloting, security team insertion, escort
  - Ops - targeting, codes, etc
  - Maintenance - maintain, load weapons
  - Command Post - process traffic, coordinate weapon use
  - Cats & dogs - civilian maintainers, federal marshals, etc

Putting it all together

- Mail Call: Season 2, Episode 7: "Deuce and a Half; Vietnam Gun Truck; World War II Household Fat; Missile Silos." Sunday February 9, 2003
- Filmed at Minot, ND

Questions?


PLEASE DRIVE SAFELY
UNMARKED NUCLEAR WARHEADS
TRAVEL THESE ROADS
CHILDREN RADIATION-FREE!

Missile Medicine
Part II: Medical Standards

Todd P Huhn, Maj, USAF, MC, FS

Overview

- Medical standards - Why have them?
- How do they compare to flight standards?
- What is PRP?
- How are standards inspected?

Why have Medical Oversight?

- Look at the USSR's Strategic Rocket Forces (SRF)
  - Similar in scope / mission to our missiles
  - Poor screening resulted in...

Why have Medical Oversight?

- Mental instability
  - Mar 94: 2 killed, 2 wounded at ICBM site by SRF soldier
  - 29 Jul 99: SRF Lt Col charged with beating 9 servicemen
  - 20 Feb 03: 4 dead after SRF soldier “goes berserk” before shooting self
- Identify medical reliability issues
  - 29 May 03: 9 Desert from SRF unit
  - 20 May 99: Drug rates in SRF noted to risen 2.4 x
  - 11 Oct 98: 20 SRF servicemen dismissed for psychological problems in one year …from a single unit.

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Medical Standards

- Space & Missile Operations Duty (SMOD)
  - SMOD exam similar to flight exam
  - Includes Adaptability Rating for Space and Missile Operations Duty (ARSMOD)
  - Patient maintains a 1042 for alert status
  - Patient must qualify for Personnel Reliability Program (PRP)

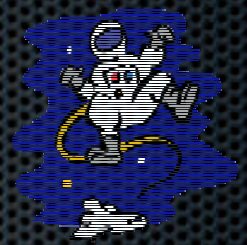
Operational PRP

- Despite popular belief, PRP isn’t a punishment
- Medical PRP is only one aspect
- Personnel constantly monitored
  - By CC
  - By each other
  - By themselves

PRP vs. Flight Medicine Similarities

- Patients are pre-screened before entry
- Members are monitored for disqualifying conditions
  - Medications may require a member to be removed
  - Medical conditions may require a member to be removed
- Medical records are flagged and filed separately
- A qualified provider must sign all chart entries
  - Flight surgeon for FLY, CMA for PRP

PRP vs. Flight Medicine



PRP

- **Medications:**
  - **May use any OTC or any supplement (with temporary duty limits)**
  - **Only sedatives, narcotics, or psychoactive Rx require suspension / decertification**
- **Medical Conditions:**
  - **Only drug dependency or abuse are absolute DQ**
  - **No waivers, but certain conditions may be temporarily DQ**

Flight Med

Medications:

- **May only use limited OTC**
- **Require FS approval for supplements**
- **Most Rx require DNIF or waiver for use**

Medical Conditions

- **Wide array of DQ issues**
- **Most chronic conditions require waivers**

OTC Medication use

- Non-Fly PRP members may use any FDA approved OTC or commercially available nutritional supplement IAW manufacturer's instructions, with the following conditions:
- They may not use an OTC within 12 hours of reporting to duty if:
- 1. They have never taken the OTC before OR
- 2. They have experienced duty-limiting side effects
- from use in the past
- If adverse effects occur, they must contact a CMA.

Inspections

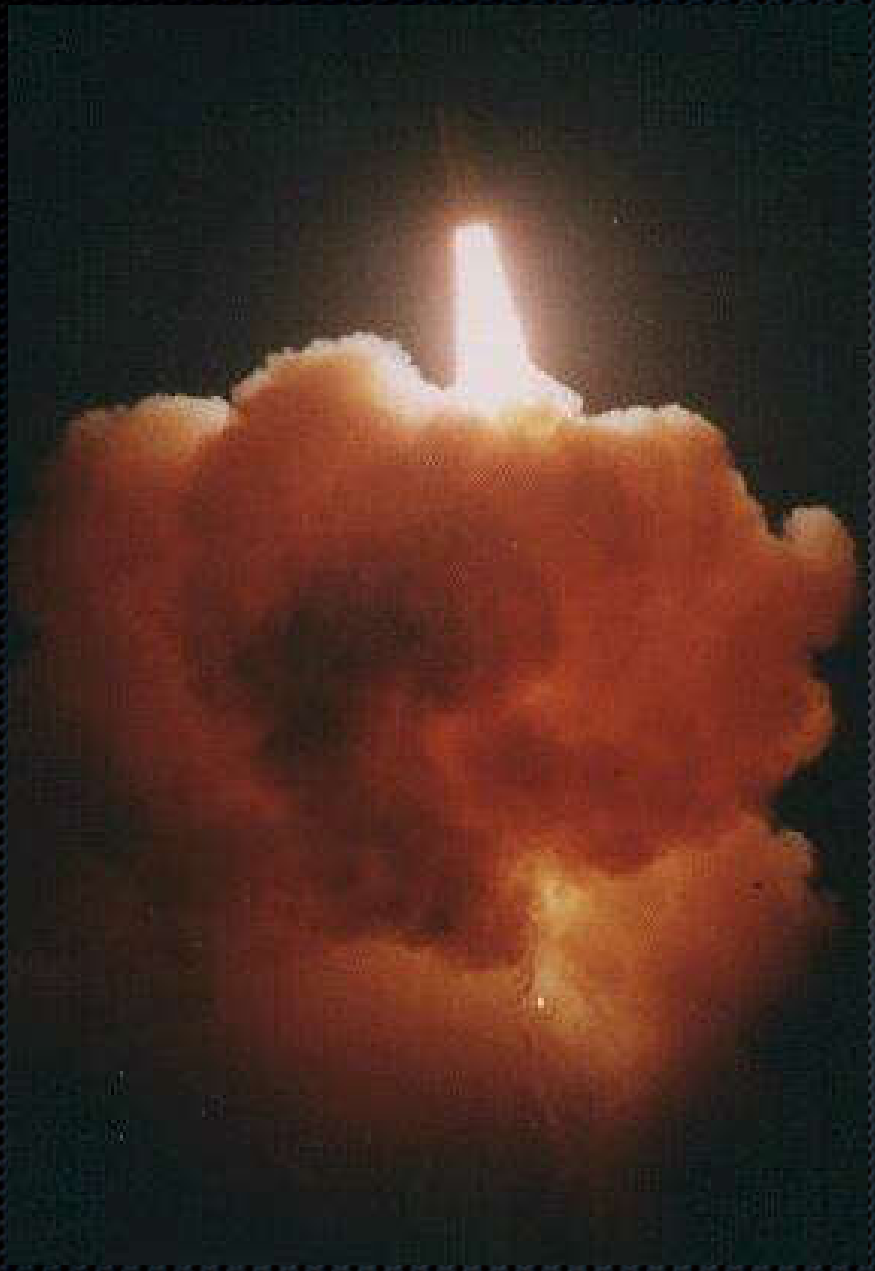
- Staff Assistance Visits (SAV)
  - Goal is to assist in finding / correcting errors
  - Yearly
- Nuclear Surety Inspections (NSI)
  - PRP is critical aspect of basewide inspection
  - Every 12-18 months
- Defense Threat Reduction Agency (DTRA)

Summary

- PRP exists to assure reliability in personnel who work with nuclear weapons
- Medics must report potentially disqualifying conditions (PDI) to the Certifying Official (CO)
- Recommendations may include:
  - Suspensions (up to 30 days)
  - Temporary decertifications (180 days, but extendable to 270)
  - Permanent decertifications (self-explanatory)

Summary

- All reporting to the CO is a ***recommendation*** only
  - They may choose not to follow our recommendations
- PRP and Flight are different programs
  - A member can be cleared for one but not the other
- Always assume the member is “up”
  - Continue to pass PDI and recommendations whether member is “up” or “down” by squadron



Questions?

PART III: Personnel Reliability Program (PRP) Basic Training

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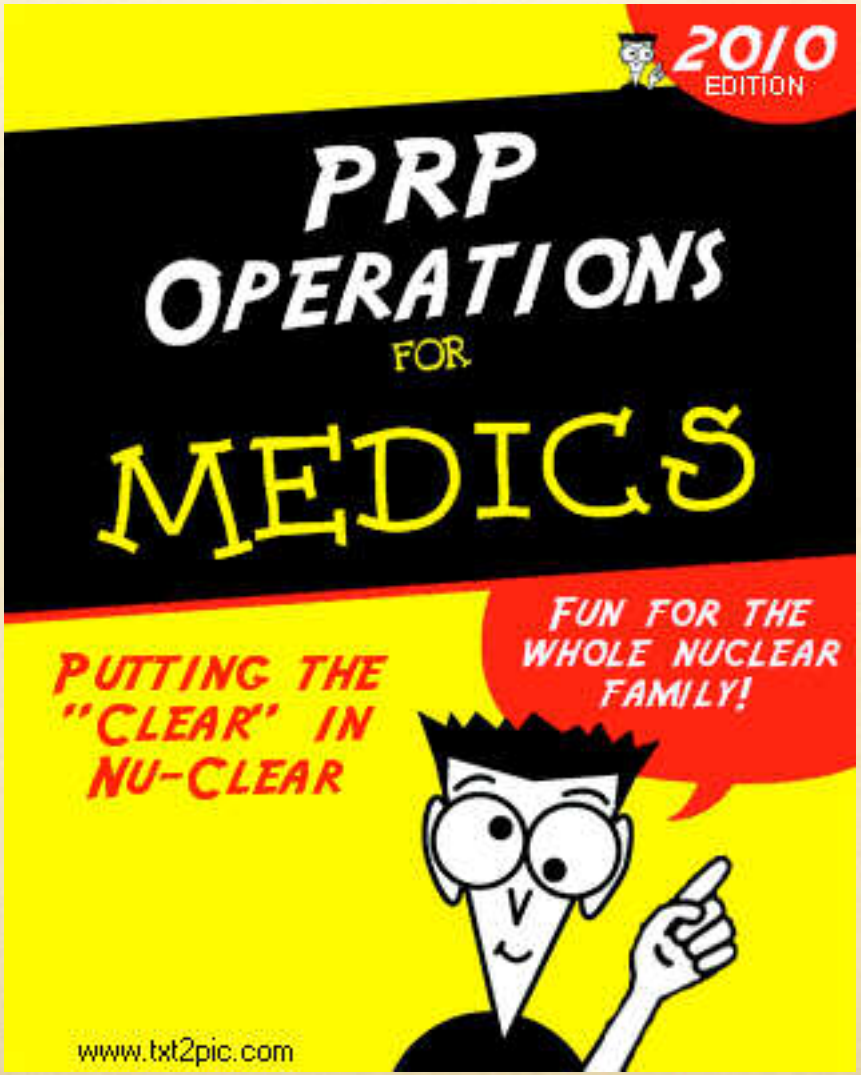
Maj, USAF, MC,FS, MPH

Also known as...



Overview

- Medical role in PRP
- Responsibilities within PRP
- Potentially Disqualifying Information
- Documentation
- Notifications
- Comparison of PRP and Flight medicine
- Summary

PRP Mission

- The purpose of the PRP is to ensure the highest possible standards of individual reliability in personnel performing duties associated with nuclear weapons and their critical components.

Operational PRP

- Safeguards - PRP is only one
  - Entry control points
  - No Lone Zones
  - Stockpile monitoring
  - Coded authorizations for release
  - Direct order to release from CINC

Guidance

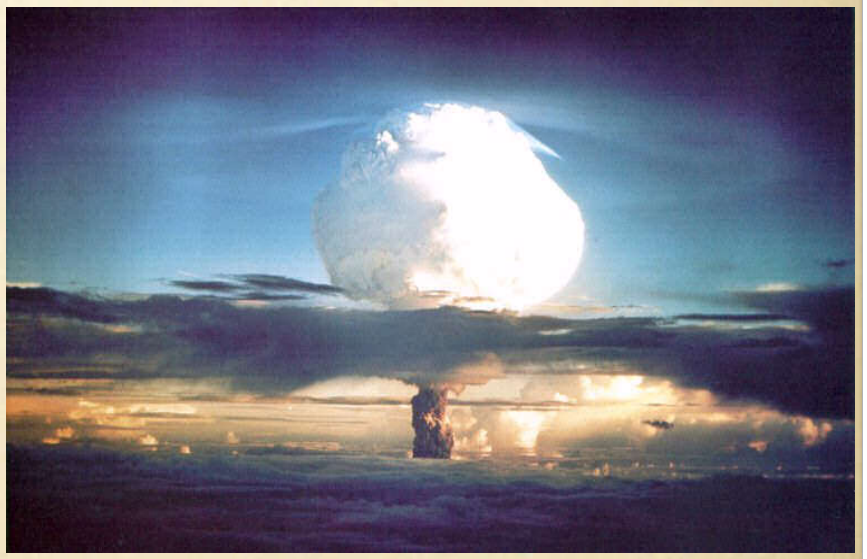
- Two rulebooks:
  - AFMAN 10-3902
  - DoDi 5210.42-R

PRP Individual Responsibilities

- Patients must inform clinic of PRP status
- Provide accurate information of medical condition
- Notify Certifying Official of any treatments
- Insure their own reliability

Medical Role

- Commanders need to know if their troops are unreliable in any way.
- Medical conditions and treatments can dramatically affect attitude and judgment.
- We are observers and communicators.



Competent Medical Authorities (CMA)

- A CMA must review all chart entries and off-base care
  - Appointed by MDG Commander as consultant for the line
  - Any licensed, credentialed provider can be a CMA (ie - DO, MD, PA, OD, DDS, etc)
  - Only a CMA may determine if information is potentially disqualifying
  - RN's, EMT's, and tech entries must be signed / reviewed by a CMA.

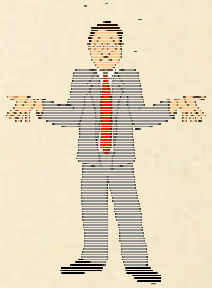
Medics are the COs Eyes and Ears

- CO's compile data from various sources
  - *Medics*
  - *Supervisors*
  - *Individuals themselves*

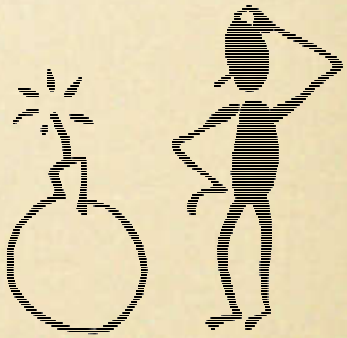
***BOTTOM-LINE*--the CO must know all of the information available to assess PRP individuals' reliability to perform PRP duties**


WHAT!?!
Are you on PRP?
CREAGER

PDI



- Q: What is PDI?
- A: “Potentially Disqualifying Information”



- Q: So…what is PDI, really?
- A: Any information which would make a member’s reliability questionable.

Examples of possible PDI

- Alcohol related incidents
- Chronic diseases
- Psychiatric disease
- Sleeping disorders

Other possible PDI

- Lacking dependability (frequently missed appointments)
- Inability to adjust to change
- Poor social or emotional stability
- Behavior which shows contempt for law and authority
- Anything else which affect concentration, judgment or personality

“Medically induced” PDI

- We tell people not to drive while taking certain medications.
  - How about working on nuclear bombs?
- Tranquilizers, narcotics and sedatives REQUIRE reporting.

PDI Pitfall #1: Too little Information

- If the information doesn't impact the job (ie: suspension, temp decert, etc) why pass it along?
  - Medical is only one part of the picture
  - The CO marries medical info with personnel info, trends, interviews, etc
  - The CO needs an accurate picture to determine duty status

PDI Pitfall #2: Too much information

- Why not just report everything, just to be safe?
  - CMA's role is to give an accurate picture
  - Information overload distorts the member's underlying condition
  - Reputation for "crying wolf" when serious PDI discovered

Reporting
AKA - “The Stamp”

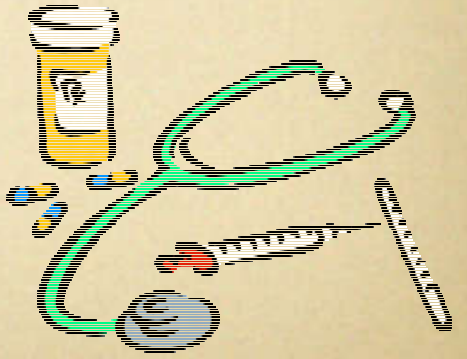
- (DATE) Is PRP Reporting Required? Yes( ) No ( )
  - If yes, then what functional impairment is expected?_____
    - Prescribed Med_____
    - Estimated Duration_____ Unit_____
    - Person Contacted at Unit_____
    - Date _____Time_____Duty Ph_____
    - Notification made by_____

Reporting “No”

- (DATE) Is PRP Reporting Required? Yes( ) No (✓)
  - If yes, then what functional impairment is expected?_____
- Prescribed Med_____
- Estimated Duration_____ Unit_____
- Person Contacted at Unit_____
- Date _____Time_____Duty Ph_____
- Notification made by_____

If impairment is expected

- Mark “Yes” on the stamp.
- Write the impairment in simple terms (i.e. drowsiness)
- Describe what type of medication or treatment was provided, in simlpe terms. (I.e. “Muscle relaxer” not “cyclobenzaprine”)
- State the duration of the impairment.



Reporting “Yes”

- (DATE) Is PRP Reporting Required? Yes(✓) No ( )
- If yes, then what functional impairment
- is expected?____***Drowsiness***,_____
- Prescribed medication___***Muscle relaxant***_____
- Estimated Duration____***10 days***_____Unit_____
- Person Contacted at Unit_____
- Date _____Time_____Duty Phone_____
- Notification made by_____

Common Errors

- Giving 10 days of a sedating medication and recommending suspension of only 3 days.
- Always assume the lowest dose is used when writing scripts
  - i.e.: Tylenol #3 Take 1 tablet q 4-6 hours prn pain #12
  - Recommend minimum suspension for 3 days + 1 washout
    - Total suspension = 4 days

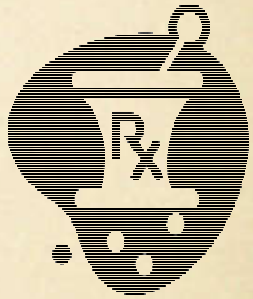
Avoiding Errors

- Avoid phrases like “Take as needed.”
- Documentation of the following should be present
  - No side effects in past OR
  - Call if side effects experienced OR
  - Discard medication 24 hours before return-to-status

Types of recommendations

- A report can recommend:
  - Suspension
  - Temporary Decertification
  - Permanent Decertification

Suspensions



- The most common recommendation
  - Initially for up to 30 days
  - May be extended to 120 days in 30 day increments
- Impairment is often due to medications or minor illness
- **The integrity of the member is <u>not</u> in question**

Suspension Length

- Do all meds require suspension for the entire duration of treatment?
  - *No. If it's a "benign" med, the CMA can recommend return if there is no impairment*
- Does medical care require suspension for the entire time of treatment?
  - *Nope. Same as with meds, if the CMA deems there is no impairment, they can recommend return to duty.*

Temporary Decertification

- Impairment is expected to last longer than 30 days
  - May last up to 270 days initially
  - May be extended to 365 days in 30 day increments
- Required if individual reliability is in question.
- *Mandatory for Alcohol Abuse or Dependence*

Permanent Decertification

- Required for Drug Abuse or Drug Dependency
- Required for Alcohol Dependence if the member fails the aftercare program
- Required for involuntary discharge from the military

Other Requirements

- Annual Audits
- HIPPA
- Daily Reviews
- PDI determinations

What drugs are permanently DQ?

- History of use of any drug that can cause flashbacks:
  - LSD
  - Mescaline
  - Peyote - *even if used legally for religious ceremony*

Self Test

A member reports that she is suspended by her squadron for non-medical issues. Early this morning, she was seen by the local civilian ER and placed on Darvocet 1 tab po q 4-6 hours #24

Do we make a notification for the Rx?

If so, how long must it be?

Does a CMA need to review the ER notes?

Would things change if she was suspended for medical issues already?

Self Test:

A PRP member presents to have a head laceration sutured. While checking the patient in, he seems disoriented and forgetful.

Is this PDI?

Does he need to see a CMA?

What are other questions to ask?

What would you recommend to the CO?

Summary

- CMA's review medical care and report to the CO
  - Recommendation may include suspension, temp. decert, or perm decert
  - All medics can do is recommend
- Report a clear picture to the CO
  - Avoid too little or too much detail
  - Document your thought process

Summary

- Certain conditions REQUIRE a recommendation:
  - Alcohol abuse or dependency = temp. decert
  - Drug abuse or dependency = perm. decert


ETHANOL
For Better Driving

Part IV: Advanced PRP

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Maj, USAF, MC, FS

Overview

- Chart Reviews
- Managing care out of the clinic
- Deployments
- Documentation pitfalls
- FAQ’s

Chart Review Section IV

Form	Watch for
Radiology reports	Head imaging – could indicate head trauma.
Lab reports	Chronic condition which may affect reliability.

Chart Review Section III

Form	Look for:
SF 88	Identifying marks, scars indicating old trauma (head?), S1 profile
SF 93	Review of history. Past MJ or EtOH use, legal issues
DD2246	Block 16: explanation of postiive responses
DD2492	Pretty much anything
AF1722 (eye exam)	HA, vision changes
AF 1753 (hearing conservation)_	Tinnitis, Dizziness
AF 522 (ER / EMS)	What was the reason? EtOH involved?
Consult letters, EKG's, legal BAL's	Why were they done? Results?

Chart Review Section II

Form	Watch for
SF600	Reports of stress or symptoms on PHA forms. Distracting symptoms on routine exam forms (ie: pap)
Post Deployment Forms	Mental Health care sought? Medical issues while TDY?

Chart Review Section I

- Prior 2766 forms, post deployment forms.

Who reviews what?

- Certification review
  - Most bases have enlisted reviewer conduct review and CMA simply signs the form 781.
  - STRONGLY recommend against that process...
    - Would you sign a script for someone without looking at the patient?
    - Review the chart yourself as well.
    - Time spent will easily be recovered at NSI.

More on reviews

- Daily review of non-CMA care
  - Must be reviewed and signed by CMA
  - Think of it like an aero-disposition
- *Good idea:* Daily review of CMA care, too
  - Have trained tech (4-A, N, etc) or civilian
  - Ensure each CMA entry is signed, dispositioned, and PDI identified or not

Question: Can I document a “stamp” in AHLTA?

- “Stamps” are not mandatory, but dispositions are
  - If all info is in AHLTA note, no “stamp” needed.
- BUT…
  - Review is very hard unless info is easily found
  - Use a cut/paste “stamp” or statement in the AP of AHLTA note.

Deployment

- If deployed to non-PRP duty for > 30 days:
  - The unit may “K-code” them to ease deployed paperwork if no continued evaluation on site (C4.2.3)
  - If CMA there…treat them like PRP
- Regardless, ALL members’ records must be screened by CMA

Reployments

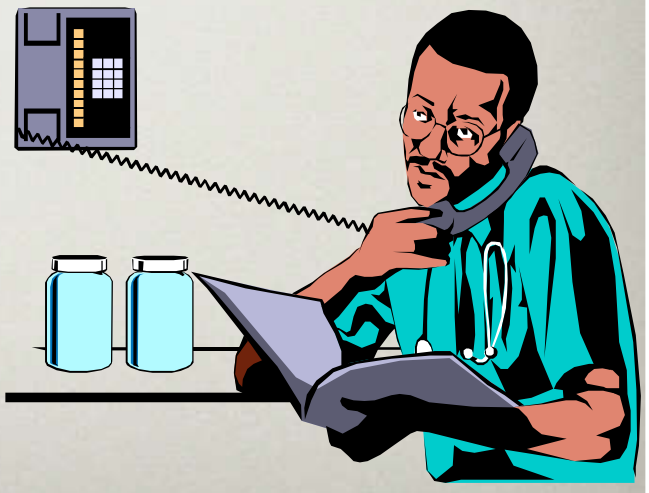
- CMA must review all deployed care
  - If CMA on site, can be done as care given
  - If CMA not on site, must be reviewed upon return home
    - Traditionally time consuming and laborious
    - BUT…can be streamlined

Reployment line

- SME assembles records en route, brings to PRP screeners immediately upon landing (1st off plane)
- 4-X checks chalk to ensure all records present
  - 4-X and CMA scan records for PRP concerns
  - If “clean”, member done
  - If PRP concerns, CMA clears on the spot
  - Documentation done on scene

Downtown Appointments

- Problem: Care outside MTF must be reviewed by CMA and CO notified of impacts.
  - Consults can take weeks to arrive…
  - ER visits may happen after hours…
  - How do you communicate quickly?



Downtown appointments

- **Solution**: Create overprint for member to use
  - Make available at PRP clinic
  - Form is completed by civilian provider and returned next duty day with member (Can be translated for non-US locales)
  - Consider if you want forms with squadron monitor
    - + : Member more likely to remember form
    - - : Member may not inform you of visit until after the fact

Sample Overprint

- **Attention:** This individual is enrolled in a sensitive duty program. All medical care must be reviewed by a trained military provider. Please complete this form and return it to the patient prior to their departure.
- **Chief Complaint:**
- **Diagnosis:**
- **Medications / Interventions:**
- **Comments:**

Documenting PDI (or lack thereof)

- PDI documentation is NOT difficult
- Anticipate what questions the next reviewer may have.
- As complexity increases, documentation should increase
  - Explain what made you decide this particular case was/was not PDI

Documenting PDI
(or lack thereof)

- Simple cases (ie: common cold)
- Unlikely that anything in note is PDI
  - **OK**: Simply state, “No PDI”
  - **Better**: “Routine self-limited URI. No PDI”

Documenting PDI (or lack thereof)

- More difficult cases (ie: scalp laceration)
- Reasonable potential for PDI
  - **Poor form:** "No PDI"
  - **OK**: "Soft tissue injury. No PDI"
  - **Better**: "Superficial soft tissue injury. No CHI. No LOC. No PDI"

Documenting PDI

- Complex cases (ie: ER visit for MVA)
  - PDI assumed to be present unless you explain why its not there.
  - **Poor form**: "ER forms reviewed. No PDI"
  - **OK**: "MVA with no major trauma. No PDI"
  - **Better:** "MVA with no major trauma. No EtOH involved. No CHI. No PDI"

Is there a standard “No PDI” statement?

- There is no “one size fits all”
  - But…if you wanted to use a general phrase, it would look something like:

  - *“Member denies mental or physical distraction due to this condition. No medical impairment expected. No PDI.”*

Why be so picky?

- Forces you to think about details
- Improves recall during reviews
- Proves you didn’t pencil whip
- Good rationale makes it hard (impossible) for inspectors to argue

A few to practice with:

- **Easy**: Member sprains her ankle at the squadron soft ball tournament, while sliding into 2nd base.
- **Medium**: Member notes history of headache on optometry evaluation.
- **Tougher**: Member complains of anxiety and stressful job during PHA questionnaire.

Possible Answers:

- Sprained ankle: Minor ankle injury. No duty restrictions. No PDI.
- Headaches: Non-distacting, self-limited HA from eyestrain. Needed new spectacles. No PDI.
- Stress: Good coping skills, no impact on duty. No PDI.

- *Getting the hang of it?*

Admin notes

- OK. You found something done wrong. now what?
  - Make admin note.
  - Include date, signature.
  - Write like an OPR bullet
    - Event, action, impact.

Examples of Admin Notes

- Event, Action, Impact
  - *Consult not initially reviewed for PDI. Note reviewed with no PDI. No medical impact to PRP.*
  - *Suspension notification not made until next duty day. Contacted squadron monitor; reviewed daily procedures with staff. No unauthorized access per squadron.*

FAQ

- How much prior-to-service marijuana is DQ?
  - No set limit
  - Can you medically call it experimental?
  - I use 10x before calling the member.
  - ** Does the number reported match? **

Meetings

- Quarterly wing meeting
  - All CC's
  - PRP monitors
  - Lead CMA
  - Expect to speak on 1-2 slides re: metrics
    - Track your certifications and recommendations
    - Excel spreadsheets with conditional formatting can be huge timesavers

Meetings

- Is there a PRP line item in OHWG? AMC?
  - Good places to track data for the Wing meeting
  - Consider adding line items to keep PRP visibility
- May be useful to have weekly / monthly meeting with lead CMA & group/CC
  - Especially if program in recovery
  - CC is ultimately responsible…and they do get fired.

FAQ

- *Should I report sprained back/ankle/etc as PDI?*
  - Members must have physical and mental reliability.
  - BUT...can they sit at a desk and run a shop?
  - Better to use a AF 469.
  - If meds are necessary, consider if suspension recommendation needed.

FAQ

- *Is an MEB PDI?*
  - No requirement to report an MEB.
  - If the medical issue affects reliability, report it for that reason.

FAQ

- *Does marijuana use during active duty DQ? What about during Academy years? ROTC?*
  - USAFA is considered “active duty”
  - Any MJ use during active duty is grounds for DQ
  - ROTC is NOT “active duty”, but still needs to be reported.

FAQ

- *Base X does things a certain way. Do I have to do that?*
  - It depends…if its required in DoDi or AFMAN, yes.
  - Otherwise, PRP is very base specific; what works in one place may not in another
    - Large active base
    - Medium sized based
    - Muns GSU with IDMT support

Summary

- PRP is not a single program, but a process
- Keep the CMA's personally involved at all steps
  - Certification review
  - Daily review
  - Annual review
  - Track suspensions and be vigilant about extension recommendations

Summary and Parting words

- Don’t assume that there is only way solution
  - Different bases require different approaches
  - Read the regs and focus on end results
- Communicate
  - Talk to the IG and MAJCOM
  - Talk to other CMA’s

Questions?